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LISTING OF CLAIMS:

1. (Presently amended) A detector array for use in association with an imaging device, said detector array comprising:

~~at least one~~ a plurality of MxN arrays of scintillator elements where "M" and "N" are independently selectable and where "M" and "N" are at least ~~one~~ two;

a mechanism for maintaining a relative position of each said scintillator element in each of said at least one plurality of MxN arrays of scintillator elements with respect to each other of said scintillator elements in each of said plurality of MxN arrays;

~~at least one~~ a plurality of photodetectors, said plurality of MxN arrays of scintillator elements being optically coupled to said ~~at least one~~ plurality of photodetectors; and

a single continuous light guide disposed between said ~~at least one~~ plurality of MxN arrays of scintillator elements and said ~~at least one~~ plurality of photodetectors, said continuous light guide defining no discontinuities including cuts and slots, ~~whereby time and expense required to fabricate said continuous light guide is minimized.~~

2. (Original) The detector array of claim 1 wherein each of said scintillator elements defines a top surface, a bottom surface, and a plurality of side surfaces, and wherein each of said plurality of side surfaces is optimized to a selected degree to define a selected light collection efficiency and to control light sharing between said scintillator elements.

3. (Presently amended) The detector array of claim 1 further comprising a plurality of reflective light partitions interposed between selected ones of said scintillator elements in at least one of said plurality of MxN arrays, at least one of said plurality of reflective light partitions defining a first height, and at least one of said plurality of reflective light partitions defining a second height.

4. (Presently amended) The detector array of claim 3 wherein an air gap is defined between adjacent selected ones of said scintillator elements in at least one of said plurality of MxN arrays.

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5. (Presently amended) The detector array of claim 4 wherein said air gap is defined between adjacent of said scintillator elements between which no said reflective light partition is positioned, ~~and between said scintillator elements and said plurality of reflective light partitions.~~
6. (Presently amended) The detector array of claim [4] 3 wherein said plurality of reflective light partitions is fabricated from a material selected from the group consisting of at least reflective powders, plastics, paints, polyvinyl alcohol, ceramics, and films.
7. (Presently amended) The detector array of claim 6 wherein said plurality of reflective light partitions is fabricated from film, said film being adhered to one side of an adjacent pair of said selected scintillator elements, ~~said~~ and an air gap being defined between said film and an opposing side of said adjacent pair of said selected scintillator elements.
8. (Presently amended) The detector array of claim 6 further comprising a grid array defined by said mechanism for maintaining a relative position of each of said scintillator elements in each of said ~~at least one~~ plurality of MxN arrays of scintillator elements with respect to each other of said scintillator elements and said plurality of reflective light partitions, said grid array defining a plurality of scintillator element cells adapted to receive said array of scintillator elements, said grid array being fabricated from a material selected to maximize light reflection at a wavelength particular to said scintillator elements.
9. (Presently amended) The detector array of claim 8 wherein said at least one array of scintillator elements are received within each of said scintillator element cells without a binding agent, ~~said~~ and an air gap being defined between each said scintillator element and ~~said~~ a side wall of said scintillator element cell.
10. (Original) The detector array of claim 8 wherein said grid array is fabricated from at least one component selected from the group consisting of at least: reflective powders,

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plastics, paints, ceramics, titanium dioxide, barium sulfate, silicon dioxide, calcium carbonate, aluminum oxide, magnesium oxide, zinc oxide, zirconium oxide, talcum, alumina, Lumirror®, Teflon®, calcium fluoride, silica gel, polyvinyl alcohol, and films.

11. (Original) The detector array of claim 10 wherein said grid array is fabricated from a composition including 20% titanium dioxide (TiO_2), 2% Teflon®, 0.2% optical brightener, and polypropylene.

12. (Presently amended) The detector array of claim 1 wherein said mechanism for ~~maintaining a relative position of each of said scintillator element in said at least one array of scintillator elements with respect to each other of said scintillator elements~~ is a bonding agent for bonding ~~each of said scintillator elements to said at least one~~ of said photodetectors.

13. (Presently amended) The detector array of claim 1 wherein said ~~at least one~~ plurality of photodetectors is selected from the group consisting of at least a photomultiplier tube, a position sensitive photomultiplier tube, an avalanche photodiode, a pin diode, a CCD, and a solid state detector.

14. (Presently amended) The detector array of claim 1 wherein said mechanism for ~~maintaining a relative position of each of said scintillator elements in said at least one array of scintillator elements with respect to each other of said scintillator elements~~ is a bonding agent for bonding each of said scintillator elements to said light guide.

15. (Presently amended) A detector array for use in association with an imaging device, said detector array comprising:

at least one MxN array of scintillator elements where "M" and "N" are independently selectable, and where "M" and "N" are at least ~~one~~ two;

an air gap defined between adjacent ones of said scintillator elements;

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a mechanism for maintaining a relative position of each of said scintillator elements in said at least one MxN array of scintillator elements with respect to each other of said scintillator elements;

at least one photodetector, said array of scintillator elements being optically coupled to said at least one photodetector; and

a continuous light guide disposed between said at least one array of scintillator elements and said at least one photodetector, said continuous light guide defining no discontinuities including cuts and slots, ~~whereby time and expense required to fabricate said continuous light guide is minimized.~~

16. (Presently amended) The detector array of claim 15 wherein each of said scintillator elements in said at least one MxN array of scintillator elements defines a top surface, a bottom surface, and a plurality of side surfaces, and wherein each of said plurality of side surfaces is optimized to a selected degree to define a selected light collection efficiency and to control light sharing between said scintillator elements.

17. (Cancelled)

18. (Original) The detector array of claim 15 wherein said mechanism for maintaining a relative position of each of said scintillator elements in said at least one array of scintillator elements with respect to each other of said scintillator elements is a bonding agent for bonding each of said scintillator elements to said at least one photodetector.

19. (Original) The detector array of claim 15 wherein said at least one photodetector is selected from the group consisting of at least a photomultiplier tube, a position sensitive photomultiplier tube, an avalanche photodiode, a pin diode, a CCD, and a solid state detector.

20. (Original) The detector array of claim 15 wherein said mechanism for maintaining a relative position of each of said scintillator elements of said at least one array of

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scintillator elements with respect to each other of said scintillator elements is a bonding agent for bonding each of said scintillator elements to said light guide.